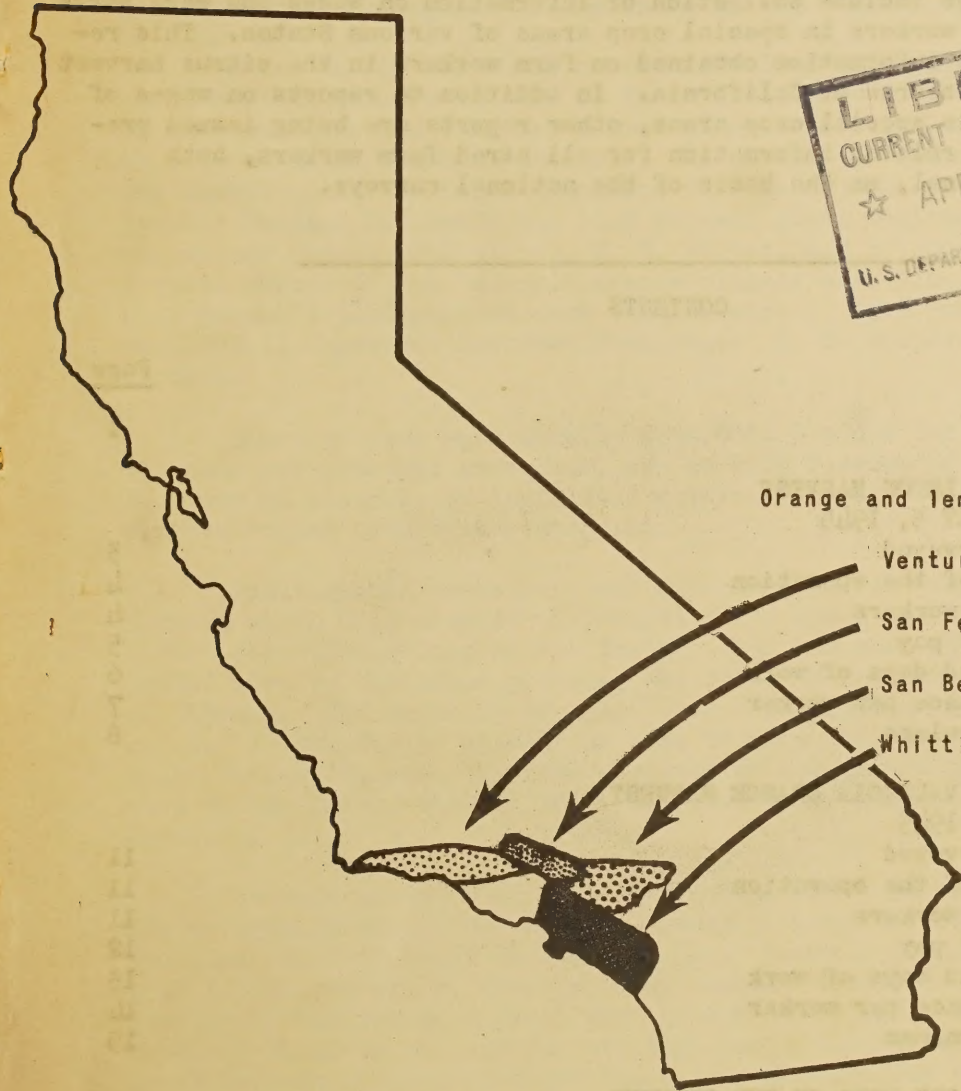


Reserve
1.941
R3Su7
no. 5

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

WAGES AND WAGE RATES OF FARM WORKERS IN THE CITRUS HARVEST,
LOS ANGELES AREA, CALIFORNIA, APRIL-JUNE 1945



LIBRARY
CURRENT SERIAL RECORD
☆ APR 19 1946 ☆
U. S. DEPARTMENT OF AGRICULTURE

- Orange and lemon pickers in:
- Ventura - Santa Barbara
 - San Fernando - Upland area
 - San Bernardino - Riverside
 - Whittier - Santa Ana area

Surveys of Wages and Wage Rates in Agriculture, Report Number 5

Washington, D. C.
December 1945

PREFATORY NOTE

This is the fifth of a series of reports being issued by the Bureau of Agricultural Economics, presenting results secured from new enumerative sample surveys of farm wages and farm wage rates. The surveys were planned and conducted under the general direction of Conrad Taeuber, Office of the Chief, by a Bureau-wide Committee, with Louis J. Ducoff as Chairman. Members of the Wage Project Committee are as follows: Glen T. Barton, Emerson M. Brooks, Charles F. Cannell, Charles A. Gibbons, Margaret Jarman Hagood, Roger F. Hale, Earl E. Houseman, Barbara B. Reagan. The State Agricultural Statisticians cooperated in conducting the field operations of the surveys.

The surveys include collection of information on wages and wage rates of seasonal farm workers in special crop areas of various States. This report presents the information obtained on farm workers in the citrus harvest in the Los Angeles area of California. In addition to reports on wages of harvest workers in special crop areas, other reports are being issued presenting wage and related information for all hired farm workers, both regular and seasonal, on the basis of the national surveys.

CONTENTS

	Page
Summary	1
1. WAGES IN THE LEMON HARVEST	
APRIL 23 - MAY 5, 1945	
Area surveyed	3
Nature of the operation	4
Type of workers	4
Rates of pay	5
Hours and days of work	6
Performance per worker	7
Cash earnings	8
2. WAGES IN THE VALENCIA ORANGE HARVEST	
JUNE 6 - 23, 1945	
Area surveyed	11
Nature of the operation	11
Type of workers	11
Rates of pay	12
Hours and days of work	13
Performance per worker	14
Cash earnings	15
3. SAMPLING METHODS USED IN THE SURVEYS	
Lemons	19
Oranges	20

Prepared by William H. Metzler. Special acknowledgment is made to George Scott, State Agricultural Statistician, and members of his staff for supervising the field work.

WAGES AND WAGE RATES OF FARM WORKERS
IN THE CITRUS HARVEST IN THE LOS ANGELES AREA,
CALIFORNIA, APRIL - JUNE 1945.

SUMMARY

Harvesting operations for lemons and oranges in the Los Angeles area are generally managed by operators of the packing houses. They hire crews of workers which they move about from grove to grove as the crops are ready to be harvested. This method of handling the harvest allows the field operations to be coordinated with those in the packinghouse. It also means steadier employment for workers on the harvesting crews.

Prior to the war these operators relied to an increasing extent on local Mexican workers to make up their field crews. By 1945, however, many of these workers had been drawn into other activities and the operators had to rely on using Mexican Nationals. The sample of lemon pickers drawn by the Bureau of Agricultural Economics for the present survey contained 73.8 percent Mexican Nationals and 21.3 percent local Mexicans. The rest were non-whites (mostly Filipinos), U. S. whites, and prisoners of war. The largest number of the Valencia orange pickers were also Mexican Nationals -- 41.0 percent; 32.8 percent were local Mexicans; 14.2 percent, prisoners of war; and 11.0 percent imported Jamaicans. U. S. whites constituted 1.0 percent.

Hours of work were usually from 8 to 9 a day for 5 days a week. Employment was somewhat irregular, not so much because of complete lay-offs of crews as absences by individual workers. Local Mexican workers had the poorest record from this standpoint.

Packinghouse operators have experimented for years on wage rate systems which will provide an incentive for speed and at the same time insure careful handling of the fruit. This has been worked out with especial care by the lemon growers, who reported the use of 16 different rates of payment. The majority of these were a combination of hourly and piece rates. In general an attempt is made to vary the rates in such a way as to allow workers to make the same earnings on all groves irrespective of yield, size of the trees, size of the fruit, and other factors which affect performance.

Average earnings of all lemon pickers were 90 cents an hour, or \$7.81 for an average day of 8.7 hours. Orange pickers earned an average of 80 cents an hour and \$6.81 an 8.5 hour day. Overall comparisons between earnings in the two crops, however, are somewhat deceptive since a large proportion of the orange pickers were prisoners of war. Mexican Nationals averaged 84 cents an hour for picking lemons and 83 cents for picking oranges. Local Mexican pickers averaged \$1.00 and 98 cents for these two operations.

In spite of the carefully calculated wage rate schedules, there were marked differences in earnings of harvest workers from operator to operator and from one part of the producing area to another. These probably were largely due to differences in speed and proficiency of the pickers. The range of earnings for Mexican National crews picking oranges was from 61 cents an hour to \$1.18, and of local Mexican crews, from 52 cents to \$1.31.

Lemon pickers had a somewhat smaller range of earnings. Differences in worker earnings were no greater from one part of the producing area to another than they were from crew to crew in the same area.

Output per worker is a topic of perennial interest in California. The Mexican Nationals picked an average of 29.0 boxes of lemons in an average working day of 8.7 hours; the local Mexicans picked 30.8 boxes in 8.5 hours; prisoners of war picked 14.3 boxes in 8 hours. Local Mexican workers showed up to better advantage in picking oranges. They averaged 56.6 boxes in an 8.4-hour day, while the Mexican Nationals picked only 47.8 boxes in a similar period. The war prisoners averaged 24.7 boxes in a day of 8.1 hours.

Both performance and earnings vary from one part of the citrus harvest season to another, so the foregoing figures cannot be taken as an overall average for the season. This is also true, but to a lesser extent, of wage rates. The packinghouses may vary them as picking and other conditions seem to warrant. The data do indicate, however, wage rates, earnings, and performance at a period when harvesting was not quite at its peak. In the case of lemons the peak period had just passed before the survey was made. The orange harvest had just started and was not yet up to the period of heaviest operations.

I. WAGES IN THE LEMON HARVEST, APRIL 23 - MAY 5, 1945.

Area Surveyed.--Over 85 percent of the lemons produced in California come from the area extending southeast from Santa Barbara into Ventura, Los Angeles, Orange, Riverside, and San Bernardino Counties. This area is protected from cold northerly winds by high mountain ridges and is relatively frost free. Lemon production is concentrated close to the coast where the climate is more equable, but other citrus crops are scattered further inland (Table 1).

The lemon harvest is handled almost entirely by operators of the citrus packinghouses. This practice permits coordination of field and packinghouse operations, to minimize delays and loss of fruit. Some packinghouses known as "co-ops" or "mutuals" are operated by groups of growers on a cooperative basis; others are run by independent shippers who buy and sell on commission. Wage and labor practices of the two types of houses do not differ greatly.

Table 1.--Bearing acreage and estimated peak labor requirements in lemons and Valencia oranges in counties covered by citrus wage rate surveys, California, 1945 season. 1/

County	: Bearing Acreage		: Workers req'd at peak		: Period of peak employment	
	: Lemons	Oranges 2/	: Lemons	Oranges 2/	: Lemons	Oranges 2/
Total	53,621	127,746	-	-	-	-
Santa Barbara	7,646	-- 3/	1,050	-- 3/	Apr.7-Apr.14	-- 3/
Ventura	16,446	15,301	2,200	950	Apr.7-Apr.21	Aug.18
Los Angeles	12,226	30,540	1,500	3,500	Mar.24-May19	Aug.25-Sept.15
Orange	7,383	64,207	800	4,600	Apr.7-Apr.21	Aug.18-Sept.1
San Bernardino	6,213	12,859	600	1,400	Mar.24-Mar.31	July 14
Riverside	3,707	4,839	400	800	Mar.16-May12	July 7-Sept.1

1/ Acreage data from California Crop and Livestock Reporting Service; estimates of workers required from Farm Labor Office of California Agricultural Extension Service.

2/ Valencias only.

3/ Not included in orange survey.

The packinghouses surveyed employed 1467 lemon pickers and 33 other workers who were engaged in loading, hauling, and supervising. Extension Service Farm Labor Offices in the counties surveyed reported a total of 6125 pickers at work at the time the survey was made. The survey therefore covered approximately one out of four workers engaged in the harvest.

The wage and employment data collected covered the operations of the 14 concerns either for the last week in April or the first week in May. At that time, according to the weekly reports of the local Farm Labor Offices of the Agricultural Extension Service, the period of peak operation had just passed. While the lemon harvest is practically continuous throughout the

year, picking is heaviest during March and April and lightest during August and September. During the peak months, employment in the area increases to around 6500 workers but drops to about 1500 during the slack period.

The 1945 lemon crop was estimated by the California Cooperative Crop Reporting Service as approximately 12,800,000 boxes, compared with an average annual production of 10,970,000 boxes for the period 1933 - 1942.

Nature of the operation.--Packinghouse fieldmen keep a vigilant eye on the groves belonging to their growers. As yield and maturity of the fruit justify picking a grove, crews of pickers are moved in. All lemons over a certain size are removed. The pickers are equipped with sizing rings to assist them in determining which fruit to take. These rings are usually about 2-1/4 inches in diameter, but the size varies according to the maturity of the fruit to be picked and the urgency to get it off. The pickers wear gloves and use a special type of clipper to avoid bruising the fruit. Years ago lemons were picked into buckets which were emptied into field boxes. Now, however, the pickers are provided with canvas picking sacks which can be unbuttoned at the bottom for emptying. The unbuttoned sack can be pulled up and away from the fruit so that none of it falls with enough force to produce bruises. Careful handling avoids heavy losses of fruit from mould and rot.

The picking sack is emptied into a field box, which holds from 45 to 60 pounds of fruit. This box is the unit measure for wage payments. Unfortunately all packinghouses do not use the same sized box. The firms covered in this survey reported field boxes ranging in size from 2880 to 3517 cubic inches. The most commonly used size, however, was 3115 cubic inches, which is known as the "standard" box. Since all firms did not report on the size of their boxes, no adjustments have been made in the figures in this study to compensate for such differences.

Type of workers.--The largest number of the workers in the sample were Mexican Nationals who had been brought in under contract between the packers and the U. S. Department of Agriculture. The rights of such workers were carefully safeguarded by Department of Agriculture officials who insured them payment at prevailing wage rates, adequate housing and sanitary conditions, proper food and medical care, and work at least 75 percent of the time for which they were contracted.

While almost 74 percent of the pickers were Mexican Nationals, another 21 percent were Mexican residents of California. (Table 2.) There were less than 2 percent each of non-whites (mostly Filipinos) and of U. S. whites included in the sample. It is likely that the same proportions held for the entire harvest. All but three of the pickers reported on were adult males. A total of 41 local Mexican or U. S. white pickers were reported as being outside the 18-44-year-old bracket. Nineteen prisoners of war were included in the sample.

Table 2.--Type of worker engaged in the lemon harvest, by race, nationality, operation performed, and age, Los Angeles Area, California, April 23 - May 5, 1945.

Race and nationality: group	: Total workers		: Operation performed		: Age	
	: Number	: Percent	: Picking	: and loading 2/	: 18-44	: Other than 18-44
Total	1,502	100.0	1,469	33	1,347	41
Mexican National	1,108	73.8	1,090	18	1,108	0
Local Mexican	320	21.3	310	10	182	27
U.S. White	26	1.7	24	2	12	14
Non-white 3/	29	1.9	26	3	26	0
Prisoners of war (German)	19	1.3	19	0	0	0

1/ Data on ages were incomplete. Mexican Nationals and German war prisoners were assumed to be within the 18-44 age bracket.

2/ These workers performed a variety of tasks but picking and loading were the most common.

3/ Mostly Filipinos.

Rates of pay.--Each citrus packinghouse devises its own rate schedule, according to the picking conditions in the groves under its charge. Higher rates of pay are calculated for small fruit, large trees, and other circumstances that make picking more difficult. Among the houses surveyed in the lemon harvest, 16 different rates were paid, and 11 of these were a combination of hourly and piece rates. Combination rates provide some incentive toward rapid work, but do not go to the extreme of pure piece rates in sacrificing quality of work for speed.

The rates most commonly paid for picking lemons were either a combination of 28 cents an hour and 14 cents a box or 30 cents an hour and 20 cents a box (Table 3). Approximately 55 percent of the lemons were being picked at these rates. Rates were as high as 50 cents an hour plus 15 cents a box or 40 cents a box straight. Workers at these high rates did not earn appreciably more than other workers however, since they were employed in the groves with the lightest yields, smallest fruit, and other poor picking conditions.

Some pattern of differences in rates of pay can be observed from one sub-area to another. Employers in the San Bernardino-Riverside area placed considerable emphasis on hourly rates and most frequently reported paying 50 cents an hour and 15 cents a box. All operators in the Ventura-Santa Barbara area also paid a combination of hourly and piece rates but

the hourly rate was usually 28 cents and the piece rate varied from 10 to 23 cents a box. In the two remaining areas the most common rate was 30 cents an hour plus from 18 to 20 cents a box but a large number of operators paid straight piece rates of from 25 to 40 cents a box.

Table 3.--Wage rates for picking lemons, Los Angeles area, California, April 23 - May 5, 1945.

Rate of pay		Number pickers at this rate	Number boxes picked at this rate	Proportion of total boxes picked at this rate
Cents per hour	Cents per box			
Total	-	2,342 ^{1/}	212,087	100.0
0	25	84	13,395	6.3
0	30	123	14,629	6.9
0	35	19	1,634	.8
0	38	37	4,488	2.1
0	40	11	473	.2
20	24	99	11,901	5.7
28	14	506	63,688	30.0
28	15	306	13,957	6.6
28	17	126	4,250	2.0
28	19	207	2,909	1.3
28	23	99	947	.4
28	31	207	5,521	2.6
30	18	89	10,449	5.0
30	20	342	53,361	25.2
36	10	69	7,940	3.7
50	15	18	2,545	1.2

^{1/} This total exceeds the total number in the study since some workers were paid at more than one rate.

These rates apply only to the period of the survey. The usual procedure is to increase the rates during the summer and fall when the picking becomes lighter, and decrease them again in the winter and spring.

Hours and days of work.--The length of work-day most commonly reported was either 8 or 9 hours, although a few foremen reported 10 or 11 hours. The average length of day for all workers was 8.7 hours. Filipinos worked the longest days, an average of 8.8 hours, while the prisoners of war averaged the shortest, 8.0. (Table 4.)

The usual work-week was either $5\frac{1}{2}$ or 6 days, depending on whether a crew picked on Saturday afternoon. Whole crews were off only in 8 cases, one for 3 days, another for 2, and six for one day. The remainder of the crews worked either $5\frac{1}{2}$ or 6 days during the week. However, there was turn-over within the crews as some workers put in only 2 or 3 days for the firm which made the report.

These irregularities brought the average time worked for the reporting firms to 4.9 days a week. Local Mexicans worked the fewest days, 4.4; and prisoners of war the most, 6.0. Because the survey was restricted to reports from employers, information was not obtained on whether absent workers were employed elsewhere during the days when they were not working for the reporting firm.

Table 4.--Average hours and days of work of lemon pickers, Los Angeles area, California, April 23 - May 5, 1945.

Type of worker	Sub-area				
	Total	Santa Barbara	San Fernando	Whittier	San Bernardino
		- Ventura	- Upland	Santa Ana	- Riverside
	Hours per day				
All workers	8.7	8.6	9.1	8.3	8.0
Mexican					
Nationals	8.7	8.7	9.4	8.0	-
Local Mexican	8.5	7.8	8.7	8.9	7.5
U.S. whites	8.7	-	8.9	-	8.6
Non-whites	8.8	-	8.8	-	-
Prisoners of war	8.0	-	8.0	-	-
	Days per week				
All workers	4.9	5.2	4.7	4.4	5.0
Mexican					
Nationals	5.0	5.3	4.7	4.6	-
Local Mexican	4.4	5.0	4.4	4.2	5.0
U.S. whites	4.8	-	4.4	-	5.1
Non-white	5.2	-	5.2	-	-
Prisoners of war	6.0	-	6.0	-	-

Performance per worker.--The 1945 survey data indicate that crews of local Mexican pickers averaged 30.8 boxes per working day of 8.5 hours. Mexican Nationals did almost as well, 29.0 boxes in 8.7 hours. (Table 5.) Filipino crews had the highest average, 37.3 boxes in a day of 8.8 hours. This was at the rate of 4.2 boxes an hour, compared with 3.6 for the local Mexicans, and 3.3 for the Mexican Nationals. German war prisoners picked approximately half as much as the other workers: 14.3 boxes in an 8-hour day.

On an area basis, the workers averaged a greater number of boxes picked per hour in the Whittier-Santa Ana area than in the others. The difference, however, was very small. Area differences in hourly earnings of the workers were affected to a greater extent by area differences in wage rates than by differences in performance.

Members of the University of California staff have made extensive studies as to the output of lemon pickers per day. County reports issued by R. L. Adams during 1936 and 1937 show a great variation in picking rates

from one county to another. In April average output per 9-hour day was estimated to be 10 boxes in Santa Barbara County, 28 in Ventura, San Bernardino and Riverside, and 20 boxes in Los Angeles and Orange Counties.^{1/}

The higher overall outputs in 1945 are undoubtedly due to the heavy crop as compared to the 1936 and 1937 seasons. Differences in local performance rates may have been due to a number of factors. Performance varies to the largest extent with three factors: first, the quantity of fruit that is taken off at a given picking; second, the size of the fruit; and third, the individual skill of the pickers available to do the job.

Table 5.--Boxes of lemons picked per hour and per day, by type of worker and by sub-area, Los Angeles area, California, April 23 - May 5, 1945.

Type of worker	Sub-areas				
	Total	Santa Barbara	San Fernando	Whittier	San Bernardino-Riverside
		- Ventura	- Upland	Santa Ana	
	Boxes per hour				
All workers	3.4	3.3	3.3	3.5	3.3
Mexican					
Nationals	3.3	3.2	3.3	3.6	-
Local Mexicans	3.6	4.2	3.4	3.6	3.5
U.S. White	3.5	-	3.9	-	3.1
Non-white	4.2	-	4.2	-	-
Prisoners of war	1.8	-	1.8	-	-
	Boxes per day ^{1/}				
All workers	29.3	28.6	30.2	29.5	26.4
Mexican					
Nationals	29.0	28.2	30.7	28.4	-
Local Mexican	30.8	32.7	29.8	31.4	26.0
U. S. White	30.6	-	35.0	-	26.7
Non-white	37.3	-	37.5	-	-
Prisoners of war	14.3	-	14.3	-	-

^{1/} Per actual working day. Average hours worked are shown in Table 4.

Cash earnings.--Average earnings of all pickers in the study were 90 cents per hour and \$7.80 per day. This figure includes the earnings of the prisoners of war which were much lower than for the free workers, but there were so few prisoners that their earnings do not greatly affect the average. They earned only 63 cents an hour and \$5.00 a day (Table 6). When they are excluded from the totals, the average earnings are raised by four cents a day.

^{1/} Compiled from R. L. Adams: Seasonal Labor Needs for California Crops For the counties listed.

Filipino pickers earned more than the other workers: \$1.14 an hour and \$10.10 in a day of 8.8 hours. Other pickers, except the Mexican Nationals, earned only slightly less. The smaller earnings of the Mexican Nationals, 86 cents an hour and \$7.60 an 8.7 hour day, may be partially because of their lack of experience and partially because they had less opportunity to select their employers. Experienced local pickers would naturally gravitate to the firms harvesting lemons in groves with the best picking conditions.

The best pickers in the study averaged slightly over \$1.50 an hour while the poorest made slightly under 50 cents. Less than 1 percent of the pickers, however, fall into each of these two groups.

Table 6.--Average earnings per hour and per day of lemon pickers, Los Angeles area, California, April 23 - May 5, 1945.

Type of worker	Sub-area				
	Total	Santa Barbara- Ventura	San Fernando- Upland	Whittier- Santa Ana	San Bernardino - Riverside
Dollars per hour					
All workers	\$.90	\$.80 <u>1/</u>	\$.99	\$.96	\$.99
Mexican					
Nationals	.86	.79	.97	.93	-
Local Mexican	1.00	.87	1.07	.99	1.02
U.S. White	1.13	-	1.28	-	.97
Non-white	1.14	-	1.14	-	-
Prisoners of war <u>2/</u>	.63	-	.63	-	-
Dollars per day					
All workers	\$7.80	\$6.90	\$9.00	\$7.90	\$8.00
Mexican					
Nationals	7.60	6.90	9.10	7.40	--
Local Mexican	8.50	6.80	9.30	8.80	7.60
U.S. White	9.80	-	11.40	-	8.30
Non-white	10.10	-	10.10	-	-
Prisoners of war <u>2/</u>	5.00	-	5.00	-	-

1/ Excluding 10 percent bonus paid to workers who remain to end of season.

2/ Actual pay received by prisoners of war according to terms of the Geneva Convention was 80 cents a day. The balance of their earnings went to the U. S. Treasury.

Approximately one-fifth of the workers earned less than 75 cents an hour. (Table 7). The bulk of these were Mexican Nationals. Over half of

the workers earned between 75 cents and \$1.00 an hour. Heaviest representation in the group was from the Mexican Nationals and the local Mexicans. Half of the non-whites and one-third each of the local Mexicans and U. S. whites earned between \$1.00 and \$1.24 an hour. Highest proportional representation in the group of workers who earned \$1.25 an hour or more was from the U. S. whites and non-whites. Over one-fourth of each of these types of workers came in this category.

On an area basis, pickers made considerably less in the Santa Barbara-Ventura area than in the others. Figures on employment compiled by Agricultural Extension Service Farm Labor Offices indicate that picking had dropped off in this district to a greater extent than in the rest of the area.

A small group of workers were included in the survey who performed a combination of jobs. These averaged somewhat higher earnings than those who did straight picking. They averaged \$1.10 an hour, or \$9.80 for an average day of 8.7 hours. They usually combined loading with picking, but some acted as supervisors to see that the work was done properly.

Table 7.--Lemon pickers who made specified amounts per hour by type of worker, Los Angeles Area, California, April 23 - May 5, 1945.

Type of worker:	Hourly earnings					
	All workers	Under 50 cents	50 - 74 cents	75 - 99 cents	\$1.00 - \$1.24	\$1.25 and over
Total						
Number	1469	6	290	811	301	61
Proportion	100	1/	20	55	21	4
Mexican Nationals						
Number	1090	4	253	649	169	15
Proportion	100	1/	23	60	16	1
Local Mexicans						
Number	310	2	17	148	111	32
Proportion	100	1	5	48	36	10
U. S. Whites						
Number	24	0	1	8	8	7
Proportion	100	0	4	33	33	30
Non-whites						
Number	26	0	0	6	13	7
Proportion	100	0	0	23	50	27
Prisoners of war						
Number	19	0	19 2/	0	0	0
Proportion	100	0	100	0	0	0

1/ Percentage less than 1/2 of 1 percent.

2/ Actual pay received by German prisoners of war according to terms of the Geneva Convention was 80 cents a day. The balance of their earnings went to the U. S. Treasury.

II. WAGES IN THE VALENCIA ORANGE HARVEST, JUNE 6 - 23, 1945.

Area Surveyed.--The largest acreage of Valencia oranges in California is located in Orange and Los Angeles Counties. Smaller plantings are in Ventura, San Bernardino, Riverside, and adjacent valley areas. (Table 1.) As in the case of lemons, the crop is handled by the packers who move crews of pickers from grove to grove as the fruit is ready to be harvested. Reports as to wage rates, hours, and earnings of the pickers were therefore obtained from the packinghouse operators. There were 170 of these operators in the area, and reports were obtained from 19 of them. These were selected so as to represent each of the four major producing districts, Ventura County, the foothill area from San Fernando to Upland, the Whittier-to-Santa Ana district, and the San Bernardino-Riverside area. Within each district, an additional breakdown was secured as between large and small operators.

These packers reported using 963 pickers during the period June 6 - 23, 1945, and 63 other workers who combined picking with loading or other duties. According to reports of the Farm Labor Offices of the Agricultural Extension Service, there were 10,025 pickers at work in this area during the week ended June 23, so the survey covers approximately a 10 percent sample.

The 1945 Valencia harvest in this area started around the first of June, and, according to reports of the Agricultural Extension Service Farm Labor Office, was approximately 15 percent complete at the time of the survey. The 1945 crop was so heavy that the fruit did not attain normal size. The usual result of small-sized fruit is to reduce the output per worker in spite of the heavy yield. The employment situation was affected by the fact that the packers were unable to get enough cars to handle the crop. Fruit was picked quite slowly, as packers preferred to have it remain on the trees rather than accumulate storage charges in local warehouses.

Nature of the Operation.--Harvest operations are quite similar to those described for lemons. Packinghouse fieldmen determine when a grove is ready to be picked. The same care is taken in handling the fruit to avoid bruising it. In the case of Valencia oranges, however, the worker removes all fruit in one picking. Hence the work does not call for the careful judgment required for picking lemons.

The picking season for Valencias extends from the latter part of May until the first of November. The time when a particular grove will be picked over depends on the ripeness of the fruit and on marketing conditions. The peak season varies somewhat from one part of the area to another, but generally occurs in July or August.

Type of Workers.--Over 41 percent of the workers employed by the 19 packinghouses in the sample had been imported from Mexico, and another 11.1 percent from Jamaica. Most of these imported workers were quite new at picking oranges, but were rated highly by employers on the basis of dependability and conscientious effort. German prisoners of war constituted another 14.2 percent of the workers. Thus 63.3 percent of all workers had been drawn from outside sources, and were unfamiliar with the industry. Of the customary types of workers, there were 336 local Mexicans and 10 U. S. whites,

or 32.8 percent and 1.0 percent of the total group. (Table 8.) The average performance of the customary types of workers, indicated that many of them were either key men or experts at picking.

All the workers were adult males. Women are usually employed in the packinghouses, rather than in the field. Age data obtained were quite incomplete, but no workers were reported as under 18 years of age and only a small proportion as over 44.

Table 8.--Type of worker engaged in the Valencia orange harvest by race, nationality, and operation performed, Los Angeles Area, California, June 6 - 23, 1945.

Race and nationality group	Total workers		Operation performed	
	Number	Percent	Picking	Picking and loading 1/
All workers	1026	100.0	963	63
Mexican Nationals	421	41.0	398	23
Local Mexicans	336	32.8	306	30
U. S. White	10	1.0	10	0
Non-white (Jamaican)	113	11.0	103	10
Prisoners of war (German)	146	14.2	146	0

1/ These workers performed a combination of tasks and were paid at several different rates. Picking and loading were the most common operations performed, others were scattering boxes, moving ladders, and supervising pickers.

Rates of pay.--Rates of pay for picking oranges and lemons are ordinarily figured so as to yield reasonably comparable returns. The two crops draw from the same labor market and the same packinghouse often handles both orange and lemon picking crews. Picking rates for individual groves are varied to compensate for conditions that affect the output per worker. The most important of these conditions are yield, size of the fruit, height of the trees, brushiness of the trees, and slope of the land. Some firms paid two, three, or four different rates during the period of the survey, in order to make such compensations.

Oranges are customarily picked on a piece-rate basis. The unit of measurement is the field box, the "standard" size containing 3115 cubic inches. Actually the capacity of field boxes used in the industry varies from 2926 to 3426 cubic inches, a range of over 15 percent.

There were no specific wage ceilings in effect in regard to picking oranges. Packinghouse operators, therefore, were free to pay rates as high as a particular situation seemed to them to call for.

During the enumeration period, over two-thirds of the oranges were being picked at 15 cents a box. (Table 9.) In all, however, 10 different

rates were being paid, ranging from 10 to 20 cents a box. Most of the firms paying less than 14 cents a box were located in Ventura County and paid an additional 10 percent bonus to workers who remained throughout the season. Even without the bonus, workers in this county had almost as high earnings as those in other parts of the area. The firms paying over 15 or 15½ cents were located in the San Bernardino-Riverside area.

Table 9.--Proportion of oranges picked at various rates, Los Angeles Area, California, June 6 - 23, 1945.

Rate per box	Number workers who picked at this rate	Boxes picked at this rate	Proportion of boxes picked at this rate
Total	1,123 <u>2/</u>	219,041	100.0
.20	32	3,243	1.5
.19	5	186	.1
.16	34	4,994	2.3
.15½	126	26,374	12.0
.15	657	150,077	68.5
.14	43	6,033	2.7
.13 <u>3/</u>	37	4,362	2.0
.12 <u>3/</u>	54	4,984	2.3
.11 <u>3/</u>	93	12,444	5.7
.10 <u>3/</u>	42	6,344	2.9

1/ Boxes varied in capacity from 2926 to 3426 cubic inches; most usual size was 3115 cubic inches.

2/ This total exceeds the total number in the study, since some workers were paid at more than one rate.

3/ Plus 10 percent bonus to workers who remained throughout the season.

Approximately 7 percent of the workers combined picking with loading, acting as foreman, or some other responsibility. Such workers were usually paid by a combination of rates. Piece rates for loading varied according to the number of persons working together at this operation. Pickers who acted as foremen were generally paid a small amount in addition to the amount they were paid for picking. Hours and earnings of workers who performed several operations have been omitted from the totals for pickers in the survey, as information could not be obtained on time spent at each of the activities they engaged in.

Hours and days of work.--The reports indicated considerable irregularity of employment. In some cases this was due to short days or weeks worked by entire crews. One crew worked only two days, another three, and five more only four days. These were generally small crews working for small organizations. The slack in employment may have been connected with the fact that the survey was made early in the season, or that some operators were unable to secure as many refrigerator cars as they needed. Approximately two-thirds of the crews worked on a six-days-a-week basis, but comparatively few of the individual workers put in a full six-day week.

Irregularity of employment was greatest among local Mexican workers. The average time worked by all pickers for the reporting firms was 4.9 days of 8.5 hours each. (Table 10.) Local Mexicans averaged 4.3 days during the week, compared with 5.0 for the Mexican Nationals, 5.3 for prisoners of war, 5.5 for Jamaicans, and 5.5 for U.S. whites.

Table 10.--Average hours and days of work of orange pickers, Los Angeles Area, June 6 - 23, 1945.

Type of worker	Sub-area				
	Total	Ventura	San Fernando- Upland	Whittier- Santa Ana	San Bernardino - Riverside
Hours per day					
All workers	8.4	8.5	8.4	8.4	9.0
Mexican Nationals	8.4	8.4	8.4	8.2	9.0
Local Mexican	8.4	8.9	8.7	8.4	8.7
U. S. Whites	8.8	-	-	8.8	-
Non-white	8.7	-	-	8.7	-
Prisoners of war	8.1	-	8.2	8.0	-
Days per week ^{1/}					
All workers	4.9	4.9	4.9	4.8	4.8
Mexican Nationals	5.0	4.9	4.5	5.4	4.8
Local Mexicans	4.3	4.9	4.1	4.3	4.7
U. S. Whites	5.5	-	-	5.5	-
Non-whites	5.5	-	-	5.5	-
Prisoners of war	5.3	-	5.7	4.5	-

^{1/} Refers to days of employment during the week by the reporting firm. No information was obtained as to employment elsewhere.

Performance per worker.--Average output per picker depends on the experience and skill of the individual worker more than any other factor. He must know how to handle a ladder quickly and easily, and where to place it under the tree so as to be able to get the most fruit with the fewest movements. He must be able to tell at a glance whether an orange should be picked or passed by. He must then be able to coordinate the movement of his hands so as to grasp the orange firmly with one hand while clipping the stem just below the "button" with the other.

Output per worker also depends on such factors as yield of fruit, size of the fruit, size and brushiness of the trees, and slope of the land. The worker who has to set up a ladder and climb up for a handful of oranges each time, can fill very few boxes in an hour. Performance per worker is often quite low both at the beginning and end of the season.

The data from this survey indicate that local Mexican pickers were averaging 56.6 boxes per day of 8.7 hours, or the equivalent of 60 boxes a nine-hour day. R. L. Adams estimated in 1936 that the average output of Valencia oranges per worker was 50 boxes in a nine-hour day. The higher

performance by local Mexicans in this survey may be due to the large crop, or it may have been that the most expert workers tended to remain in the picking crews while the less proficient sought other jobs. The less experienced Mexican Nationals picked at the rate of 47.8 boxes per 8.4 hour day.

The other workers surveyed are not typical for the industry, yet their performance rates are of interest. German war prisoners averaged 24.7 boxes of oranges in a day of 8.1 hours and Jamaicans 39.9 boxes in 8.6 hours. (Table 11.) Both were unfamiliar with this type of work and in the case of the Germans there was no incentive to put out much effort. The pay received by the prisoners was limited to 80 cents a day irrespective of the number of boxes picked, and, according to common reports, most of them were anxious to do as little as possible that might aid their enemies.

Output per worker varied from one part of the Valencia orange area to another. Local Mexican workers had the following output per hour in the various districts surveyed: Ventura, 7.9 boxes; San Fernando-Upland, 5.2; Whittier-Santa Ana, 6.9; and San Bernardino-Riverside, 5.6. Performance rates of Mexican Nationals varied in a similar fashion. These differences are probably due either to relative 1945 crop conditions or to differences in yields and picking conditions during the survey period rather than to any permanent differences among the areas.

Cash earnings.--Average cash earnings of all Valencia orange pickers in the study were 80 cents an hour or \$6.80 a day. This figure is low because of the inclusion of average earnings for the prisoners of war, which were only about half as much as for the other workers. The government was paid 46 cents an hour and \$3.70 a day for the work of war prisoners, and the prisoners were paid 80 cents a day out of this. Average earnings for all other workers was 87 cents an hour and \$7.40 a day.

Table 11.--Boxes of oranges picked per hour and per day, by type of worker and by sub-area, Los Angeles Area, California, June 6 - 23, 1945.

Type of worker	:	Sub-area			
		: Total :	Ventura :	San Fernando: Whittier- : San Bernardino-	
		:	: - Upland	: Santa Ana:	Riverside
Boxes per hour					
Total workers	5.4	6.4	4.0	5.7	5.8
Total workers without prisoners	5.8	6.4	5.0	6.0	6.0
Mexican Nationals	5.6	6.2	4.8	5.7	5.8
Local Mexicans	6.6	7.9	5.2	6.9	5.6
U. S. Whites	6.9	-	-	6.9	-
Non-whites	4.6	-	-	4.6	-
Prisoners of war	3.0	-	2.7	3.7	-

- continued -

Table 11.--Boxes of oranges picked per hour and per day, by type of worker and by sub-area, Los Angeles Area, California, June 6 - 23, 1945, continued.

Type of worker	:	:	Sub-area			
			Total:	Ventura:	San Fernando:	Whittier-: San Bernardino
				- Upland	Santa Ana:	- Riverside
				Boxes per day ^{1/}		
Total workers	45.6	54.5	33.5	48.6		52.2
Total workers without prisoners	49.8	54.5	42.2	50.6		52.2
Mexican Nationals	47.8	52.9	40.9	47.4		53.1
Local Mexicans	56.6	69.1	45.8	58.4		48.8
U. S. Whites	61.3	-	-	61.3		-
Non-whites	39.9	-	-	39.9		-
Prisoners of war	24.7	-	22.3	29.6		-

^{1/} Figured on basis of actual hours worked.

Table 12.--Average earnings per hour and per day of orange pickers, Los Angeles area, California, June 6 - 23, 1945.

Type of worker	:	:	Sub-area			
			Total:	Ventura:	San Fernando:	Whittier-: San Bernardino
				- Upland	Santa Ana:	- Riverside
				Per hour		
Total workers	\$.80	\$.81 ^{1/}	\$.61	\$.88		\$.85
Total workers without prisoners	.87	.81 ^{1/}	.76	.91		.85
Mexican Nationals	.83	.81 ^{1/}	.72	.91		.86
Local Mexicans	.98	.82	.83	1.03		.83
U. S. White	1.04	-	-	1.04		-
Non-white (Jamaicans)	.69	-	-	.70		-
Prisoners of war	.46	-	.41	.56		-
				Per day ^{2/}		
Total workers	\$6.80	\$6.90 ^{1/}	\$5.10	\$7.40		\$7.70
Total workers without prisoners	7.40	6.90	6.40	7.70		7.70
Mexican Nationals	7.10	6.90	6.10	7.50		7.80
Local Mexicans	8.40	7.20	7.30	8.80		7.30
U. S. White	9.20	-	-	9.20		-
Non-white (Jamaican)	5.90	-	-	6.00		-
Prisoners of war	3.70	- ^{3/}	3.30	4.50		-

^{1/} Includes the 10 percent bonus paid to workers who remain through to the end of the season.

^{2/} Per actual working day as shown in Table 10.

^{3/} Actual pay received by prisoners of war according to terms of the Geneva Convention was 80 cents a day. The balance of their earnings went to the U. S. Treasury.

The average of \$6.80 per day was lowered by the inclusion of Jamaican and Mexican National workers, who had little or no experience in picking oranges. They earned 69 and 83 cents an hour, respectively. The more experienced local Mexicans earned 98 cents an hour and \$8.40 a day while the few U. S. whites made \$1.04 an hour and \$9.20 a day. Evidently the latter were largely key men.

Earnings naturally varied from individual to individual, depending on speed and experience. Some few workers earned as much as \$2.00 an hour, while others made less than 50 cents. For the group as a whole, 13.8 percent made under 50 cents an hour; 33.0 percent made from 50 to 74 cents; 31.5 percent made from 75 cents to 99 cents; 12.8 percent made from \$1.00 to \$1.24 and 8.9 percent made \$1.25 or more per hour. (Table 13.) These proportions are affected by inclusion of the German prisoners of war, of whom 93 or 63.7 percent earned less than 50 cents an hour. When they are not included only 40 or 4.5 percent of the workers earned under 50 cents an hour.

Approximately one out of five local Mexican and U. S. white pickers earned over \$1.25 an hour.

Workers who spent most of their time loading boxes of fruit on the trucks and only picked oranges between loads usually earned higher wages per hour and per day than workers who only picked. (Table 14.) Loading was usually paid for on a piece-rate basis, but several combinations of hour and piece rates were in use.

Table 13.--Orange pickers who earned specified amounts per hour, by type of picker, Los Angeles area, California, June 6 - 23, 1945.

Group and item	Hourly earnings					
	: All : workers	: Under : 50 cents	: 50- : 74 cents	: 75- : 99 cents	: \$1.00 : to \$1.24	: \$1.25 : and over
Total						
Number	963	133	318	303	123	86
Proportion	100	14	33	32	12	9
Proportion excluding prisoners	100	5	32	37	15	11
Mexican Nationals						
Number	421	14	142	163	51	24
Proportion	100	4	36	41	13	6
Local Mexicans						
Number	336	19	52	109	67	59
Proportion	100	6	17	36	22	19
U. S. Whites						
Number	10	-	1	3	4	2
Proportion	100	-	10	30	40	20
Non-whites						
Number	103	7	70	26	-	-
Proportion	100	7	68	25	-	-

- continued -

Table 13.--Orange pickers who earned specified amounts per hour, by type of picker, Los Angeles area, California, June 6 - 23, 1945, continued.

Group and item	Hourly earnings					
	All	Under	50-	75-	\$1.00	\$1.25
	workers:	50 cents	74 cents	99 cents	to \$1.24	and over
Prisoners of war						
Number	146	93	53	1/	-	-
Proportion	100	64	36	-	-	-

1/ Actual pay received by prisoners of war according to terms of the Geneva Convention was 80 cents a day. The balance of their earnings went to the U. S. Treasury.

Table 14.--Hours and earnings of workers engaged in both picking and loading, orange harvest, Los Angeles area, California, June 6 - 23, 1945.

Type of worker	Average time worked			Average earnings	
	Number of workers	Hours per day	Days per week	Per hour	Per day
Total	63	8.4	5.3	\$1.15	\$ 9.72
Mexican National	23	8.7	5.5	1.11	9.72
Mexican Domestic	30	8.0	5.0	1.31	10.55
Non-white	10	8.7	5.8	.86	7.55

III. SAMPLING METHODS USED IN THE SURVEYS.

Lemons.--The lemon-producing area is divided into eight districts for the purpose of prorating shipments. These are as follows:

District	Percent of 1943-44 shipments
1. Central and Northern California	2.26
2. Santa Barbara-Ventura	23.04
3. Santa Paula-Oxnard	20.43
4. San Fernando Foothills	15.35
5. San Bernardino-Riverside	14.39
6. Whittier-Orange County	14.06
7. San Diego	10.06
8. Arizona and others	.41
	<u>100.00</u>

Because districts 1, 7, and 8 were widely scattered and produced only 12.73 percent of all the lemons, they were eliminated from consideration. The remainder of the area is in a compact triangle around the city of Los Angeles. Since areas 2 and 3 were both located in Ventura and Santa Barbara counties, they were combined.

The sample of workers reported on in the survey was obtained through the packinghouses. These firms were asked to report on all pickers in their employ during the period covered by the survey.

A total of 64 lemon packinghouses with 1943-44 shipments of 10 or more cars each are located in the four areas surveyed. These firms were divided into two groups, depending on whether they had shipped over 300 cars during the previous season. These size-location groups were sampled by taking every fifth firm. The results were as follows:

District	All firms		Small firms		Large firms	
	Total	Number in sample	Total	Number in sample	Total	Number in sample
Total	64	14	33	7	31	7
2 & 3	19	4	4	1	15	3
4	14	3	6	1	8	2
5	14	3	11	2	3	1
6	17	4	12	3	5	1

Of the 14 firms originally selected for the sample, data were obtained from 10. Two firms were not operating during the specified period and two others declined to cooperate. Alternate firms in the same strata were substituted for these four firms, making a total of 14 firms which supplied data.

Data were obtained in regard to all pickers employed by each of these firms, with one exception. One firm was so large that reports were obtained only for one worker in three. The figures obtained from this firm were later multiplied by three, in order to give them their proper weight in the sample.

Oranges.--The orange-producing area is divided into the same pro-rate districts as those previously described for lemons. Again the scattered out-lying districts were eliminated for purposes of the study. In this survey district 2 in Santa Barbara and Ventura Counties was eliminated, as well as those in San Diego County and Arizona. The Santa Paula-Oxnard area in Ventura County was retained in the survey.

Of the packinghouses in the area, 170 had shipped 10 or more cars of oranges during the 1943-44 season. These were divided into two groups, depending on whether they had shipped more or less than 400 cars during the previous season. The firms in each group were then divided into location groups, and every tenth firm was drawn from each size-location group starting with the 5th, 15th, etc. The 6th, 16th, etc., were designated as alternates. The sample by pro-rate districts was as follows:

District	All firms		Small firms		Large firms	
	Total	Number in sample	Total	Number in sample	Total	Number in sample
Total	170	18	127	13	43	5
3	9	1	2	0	7	1
4	46	5	39	4	7	1
5	59	6	58	6	1	0
6	56	6	28	3	28	3

Data were obtained from 15 of the 18 firms originally selected for the sample. The remainder either had not started picking Valencias at the time of the survey or did not have a record of the number of boxes picked. Data were obtained from the designated alternates instead, so that the results shown are based on information from 18 firms.

SURVEYS OF WAGES AND WAGE RATES IN AGRICULTURE

Reports Now Available from the Bureau
of Agricultural Economics in
this series:

- Report No. 1, WAGES AND WAGE RATES OF SEASONAL FARM WORKERS IN SPECIAL CROP AREAS OF FLORIDA, FEBRUARY-MARCH, 1945
- Report No. 2, WAGES AND WAGE RATES OF SEASONAL FARM WORKERS IN MARICOPA COUNTY, ARIZONA AND IMPERIAL COUNTY, CALIFORNIA, FEBRUARY-MARCH, 1945
- Report No. 3, WAGES AND WAGE RATES OF SEASONAL FARM WORKERS IN SPECIAL CROP AREAS OF LOUISIANA, APRIL-MAY, 1945
- Report No. 4, WAGES AND WAGE RATES OF HIRED FARM WORKERS, UNITED STATES AND MAJOR REGIONS, MARCH 1945
- Report No. 5, WAGES AND WAGE RATES OF FARM WORKERS IN THE CITRUS HARVEST IN THE LOS ANGELES AREA, CALIFORNIA, APRIL-JUNE 1945

